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LAKE CARRIERS' ASSOCIATION.

To consider and take action upon all general questions relating to the navigation and carrying business of the Great Lakes, maintain necessary shipping offices and in general to protect the common interest of Lake Carriers, and improve the character of the service rendered to the public.

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CHAIRMAN OF THE LIGHT-HOUSE BOARD.

As outlined in these columns on the 11th ult, the rivalry between naval and military officers for the chairmanship of the U. S. Light-House Board is now taking a more definite form. The present status of the case as presented in a recent dispatch from Washington is that Gen. Duffield having succeeded Prof. Mendenhall as superintendent of the coast and geodetic survey, his situation as a member of the light-house board follows in accordance with the custom of appointing the superintendent to a position on the board. This custom is not, however, based on a statute, as the law merely provides that the board shall consist of "two officers of the navy of high rank, two officers of the corps of engineers of the army and two civilians of high scientific attainments whose services may be at the disposal of the president."

Rear Admiral Greer is now chairman and the executive head. The chairmanship is filled through election by the members of the board and at these elections the army has frequently tried to secure the prize, but the navy has always held the control. The highest ranking officers in the navy have invariably served on the board in order to outrank any of the army members. It has been the well founded impression for some time, however, that the President and Secretary Carlisle have become convinced that light-houses, being structures on land, should be controlled in the same way as are fortifications, by the engineer corps of the army. Secretary Carlisle, who is ex-officio president of the board, has been quoted as saying that he would not again vote for a naval officer as chairman. This, taken with the detail of Col. John N. Wilson as the chief army member of the board and the appointment of Gen. Duffield has warned the navy that the army may secure control. Col. Wilson has charge of the public parks and of the White House grounds and is known to be a favorite of the president. Prof. Mendenhall was favorable to the navy, but the presumption is that Gen. Duffield will be inclined to the army, as he is an ex-army officer. In case an army officer is chosen, Col. Wilson will probably be the man, but it is said by naval officers that he thinks the board should be controlled by the navy and is not a candidate for the chairmanship. Admiral Walker is now championing the cause of the navy and it is considered probable that when Admiral Greer retires Walker will succeed him.

STATE LABOR REPORT.

The Ohio state labor commissioner has secured some interesting data and in his annual report will tell what he has found out about the dock laborers and sailors of the lakes. He thinks that every vessel ought to be compelled to list, before clearing, a complete roster of her crew with the collector of the port. Many sailors have in recent years been lost whose names were never learned.

FAVOR A NAVAL RESERVE CORPS.

The society young men of Bay City are talking seriously of organizing a division of the naval reserve. The success of the Detroit division and the recent formation of one in Saginaw has prompted them to fall in line and do something of the kind themselves. Bay City's location is such that a naval reserve would have every possible advantage and the organization would become very popular. A meeting will soon be held to make preliminary arrangements for the organization.

A PACIFIC OCEAN CRUISE.

Capt. Frederick Vehling has arrived at Agana, on the Island of Guakan, in the Ladrones, having made the trip of 6,500 miles from San Francisco in a twelve-ton schooner, accompanied only by his wife and seven children. He left 'Frisco last spring to engage in coffee planting in the South Seas, and a letter received from his wife tells the story of their remarkable voyage. Vehling's oldest child is 14 years, but the two eldest children took turns in steering during the day and the father and mother alternated at night. It took six weeks to reach Honolulu from San Francisco and 33 days more to run from Honolulu to Agana. The schooner is 46 feet long and 12 feet beam.

OCTOBER CANAL TRAFFIC.

The monthly report of E. S. Wheeler, engineer in charge of the St. Mary's Falls canal, to Gen. O. M. Poe, corps of engineers, U. S. Army, in charge of the northwest division, shows a gratifying state of facts regarding the traffic of the month, as compared with the corresponding month in previous years. The passages through the lock during October were as follows:

Steamers	1,525
Sail vessels	495
Rafts and unregistered craft	89
Total	2,109

Tonnage passing through the lock was as follows:

Total registered tonnage	1,539,289
Total freight tonnage	2,151,534
Passengers	1,155
Number of lockages	900

Comparison with October, 1893:

1894	2,109	1,939,289	2,151,534
1893	1.695	1,465,756	1,560.292
Increase	414	493,533	591,243

This comparison shows an increase in freight tonnage over the corresponding month last year of over half a million tons, and a decided gain in all the other items. The item of freight is only 59,094 tons, or about one average day's freight, less than during September, making it the most remarkable October in the history of the canal. On the 24th of the month the record for the number of vessel passages was broken, 105 passing the lock on that date, an excess of seven over any previous day's work in the canal's history.

The freight tonnage through the canal has been unusually large, nearly half a million tons more than during October, 1893. The total freight tonnage through the canal up to November 1 was 11,748,986 tons. This is 534,653 tons more than the total business for 1892. If the present rate continues during the remainder of the season the freight tonnage will exceed 13,000,000 tons.

LIGHT-KEEPERS APPOINTED.

The secretary of the treasury has appointed Herbert N. Burrow keeper and James Pottenger first assistant keeper of the light-station at Port Austin Reef and Frank E. Kimball keeper of the Fort Gratiot light-station, vice Israel T. Palmer, removed.

SALVAGE COMPANIES UNITE.

A project is now under way to unite the principal salvage companies on the Atlantic and Gulf coasts for mutual services in salvage and wrecking enterprises on the coast.

The names of the salvage companies that it is proposed to unite are the Boston Towboat Co., Boston; the Davis Coast Wrecking Co., New Bedford; the Chapman Derrick Co., the Luckenbach Co., and Morse & Co., of New York; the Key West Salvage Co., Key West; Peter Wright & Sons, Philadelphia; Baltimore Wrecking Co., Baltimore, and B. D. Wood and W. G. Wilmot & Co., New Orleans. It is not understood that these concerns are to be united in any way except simply for such business as may come to them on the section of coast mentioned. Otherwise they would act independently.

NEWS AROUND THE LAKES.

CHICAGO, ILL.

Special Correspondence to The Marine Record.

The Independent Tug Line sold their tug Dennis Bros. to Messrs. Viles and Robbins, Chicago. Consideration $2,000.

Palmer, Cook & Calbick chartered the schooner Isabella J. Boyce and schooner George J. Boyce for corn to Port Huron at 1 cent.

S. J. Chapman, of the Manistee Iron Works, Manistee, Mich., spent several days in Chicago last week on business connected with the firm.

Carr & Blair chartered the steamer Edward Smith and schooners Angus Smith, James G. Blaine and D. L. Filer, all for wheat to Milwaukee at ¾ of a cent, free out.

The steamer Puritan, Capt. P. McQuiggan, arrived from St. Joseph last Thursday morning on her last trip for this season. She left here Thursday afternoon for Manistee to go into winter quarters.

Capts J. J. Rarden and William Keith made a survey of the steamer Wyoming in Miller Bros.' dry dock last week. They estimate the amount of damage done by her going on Dunlap Reef, Sturgeon Bay, at $2,500.

W. M. Egan chartered the schooner William Edwards for 70,000 bushels of oats at ⅞ of a cent, her consort, the Golden Age, for 85,000 bushels of wheat at 1 cent, the steamer City of Rome for 100,000 bushels of barley at ⅞ of a cent, all to Buffalo.

The schooner Ada Medora, Capt. Wm. Shaw, which arrived Saturday with lumber, and the schooner Truman Moss, which arrived Monday with lumber, stripped off their sails whilst lying at the lumber market and will go into winter quarters at once.

The barges Genoa, Capt. D. C. Ryan and Our Son, Capt. Wm. Edgar, which arrived Saturday with two million feet of lumber from Duluth in tow of the steamer C. H. Green, will strip and go into winter quarters here as soon as they are unloaded.

The steamer Arthur Orr had one of her gangway covers knocked into the river near Van Buren street Sunday by collision with the jibboom of the schooner Cora A, which was lying at the dock. The cover was located by a diver and raised by a steam derrick. The schooner's jibboom was not damaged.

The Goodrich Transportation Co.'s steamship Virginia made her last trip for this season on Saturday and went to Manitowoc where she will go into winter quarters. The Virginia has had a most successful season. The steamer Muskegon of the Goodrich Co., went into winter quarters at Manitowoc last week.

Leatham & Smith's scow, Harry Johnson, arrived here last Thursday in tow of the tug John Leatham with 700,000 feet of dry lumber from Garth, Mich. The Johnson carries a crew of two men only. Your correspondent hopes they will not prove to be two too many on some occasion when caught in a gale of wind.

The Chicago Ship Building Co. have placed an order with the American Ship Windlass Co., Providence, R. I., for two steam capstan windlasses to handle the anchors and chains forward, two steam capstans aft to handle the stern lines, and also two steam towing machines, for the steel barges they are now building for the Minnesota S. S. Co.

Elphicke & Co. chartered the steamer Josephine for 40,000 bushels of wheat and schooner Thos. L. Parker for 44,000 bushels of wheat from Fort William, Lake Superior, to Buffalo at 3 cents, steamer D. W. Rust for pig iron, Manistique to Buffalo, at 70 cents per ton, free in and out; the steamer Escanaba for 60,000 bushels barley to Cleveland at 1 cent, the steamer Argonaut for 51,000 bushels of barley to Oswego at 2¼ cents; the steamer J. J. Hill for corn to Port Huron at 1 cent.

When fifteen miles off St. Joseph the Peerless, of the Lake Superior line, from Duluth to St. Joseph with flour, blew out her cylinder head. She was sighted by the lookout at the life-saving station and assistance was sent to her. After the cargo is discharged the steamer will be towed to this port, where repairs will be effected, after which she will go into winter quarters.

Grain freights are flat with little signs of improvement, although the season is drawing so near a close. It is thought that A1 vessels will seeure considerable winter storage here on account of the slack fall shipments.

The steamer Majestic, light, when going down the south branch of Chicago River last Thursday afternoon in tow of the tug Van Schaick collided with the steamer Australasia, laden with coal. The accident occurred at Collision bend, 16th street. The Australasia, going up the river in tow of the tug Crawford, stopped alongside the steamer Conemaugh laying at the Rock Island freight dock, to let the Majestic pass her. The Majestic when making the bend struck the dock with her bow, causing her to make a sheer, and she struck the Australasia, stem on, about 10 feet aft of her stem on the starboard side, cutting her down to the load line. A survey was held on the Australasia by Capts. Herriman, Wm. Keith and C. H. Sinclair. She will require nineteen strakes of outside plank, eleven strakes of ceiling, two frames, shelf pieces, stringers inside and outside, covering board, some new deck and other repairs. Temporary repairs were made on her by J. B. Bates & Co., shipbuilders, and she left here Tuesday night for Fort William, Lake Superior, to load grain for Buffalo.

CLEVELAND, O.

Special Correspondence to The Marine Record.

The steamer Dove will be sold at marshal's sale in Toledo on Friday, November 16.

The steamer C. J. Kershaw and schooner Moonlight have arrived at this port to go into winter quarters.

Harvey H. Beeson, publisher of *Beeson's Inland Marine Guide*, spent Tuesday at this port and left in the evening by steamer for Buffalo.

Capt. James Davidson, shipbuilder of Bay City, and Mr. Calbick, vessel broker and insurance agent of Chicago, visited this port on Wednesday.

Quite a large number of sail vessels and tow barges are already going into winter quarters at this port and it now looks as if more vessels than usual would winter here.

The schooner P. S. Marsh has gone into winter quarters at Toledo. Capt. J. Doville, her owner and master, contemplates taking an excursion party down the Mississippi to New Orleans during the winter months.

Directors of the Cleveland & Buffalo Line held a meeting this week to determine on the building or purchasing of a new steamer to place on the route next season. The result of the meeting has not yet been made public, but it is understood that some further consideration will be given the subject before either building or buying.

Through the well-advised action of the Chamber of Commerce, coupled with the recommendation of the district officer, Col. Jared A. Smith, corps of engineers, U. S. Army, authority has been given from Washington to open up the west arm of the breakwater so that live water may be allowed to course through the outer harbor.

The steamer Portage of the Union Transit Line, Buffalo, was docked at the Ship Owners' Dry Dock for survey and repairs to stern post and rudder, damaged through picking up a log in her wheel while changing berths at this port. Mr. Robert Logan represented the owners and Mr. Joseph R. Oldham the underwriters, placing the cost of repairs at about $500.

The builders and owners of the steamer Globe call attention to an error in the telegraphic dispatches this week from Buffalo stating that the Globe, among others, ran back for shelter. The facts are that the Globe did not run back, although a number of other steamers found it better to do so. A head wind was blowing about sixty miles an hour, and while the Globe encountered some very heavy weather she made the run from Buffalo to Detroit in 25½ hours.

On her first trip down from Duluth, the large steel steamer Globe, built by the Globe Iron Works Co., on speculation, carried 2,749 tons flax seed and flour on a draft of 14 feet 4 inches including her fuel. The Globe is one of the largest and best built steel steamers on the lakes and has been constructed to meet the twenty-foot channel project. From the draughtsman's figures she is to carry 3,000 tons on fifteen feet, 4,218 on eighteen feet, or 151,000 bushels on eighteen feet and a half. The Globe will be sailed by her builders unless purchased at an early date.

General Manager John Gordon and Assistant General Manager F. P. Gordon, of the Northern Steamship Company, were in the city on Monday holding a conference with the principals of the Globe Iron Works Co. Mr. F. P. Gordon, in response to an inquiry, said that they were here just "to round up matters." While orders had not yet been given to push the work on the steamer North Land at her present stage of construction, there was plenty of time ahead, as the North Land could be launched in ten days if necessary. There is certainly some hitch to be overcome in the completion of the sister ship to the North West, and it seems to rest more with her contractors than builders.

BUFFALO, N. Y.

To the Editor of The Marine Record:

The Buffalo, Rochester & Pittsburgh Railroad will this winter increase its facilities at the docks on Ganson street, and the first move to that end is in the decision made to erect a large derrick on the dock for use in handling heavy freight. It is contemplated by the road to build on Ganson street during the winter a large and commodious freight shed for the handling of lake and canal freight. The room is much needed at the docks, and it is expected that work will be commenced to meet the demands of traffic before the opening of navigation next season.

This port will have about the usual number of vessels wintering here and the 15th will see some of them dismantling for the season unless the Chicago grain freights move up at a lively gait.

So far as the Northern Steamship Co. is concerned it is now expected that the last sailings from Buffalo will be on Saturday, Nov. 17, and all freight must be there and ready for shipment on the Northern Line steamers on or before Nov. 16.

A large fleet of lumber carriers are slated to go into winter quarters at Tonawanda this trip. These vessels have been steady traders all season and are the following well known tows: Steamer Ed Smith and consorts Fryer, Marvin and Fillmore; the Tice, Allegheny, Kingfisher and Oneonta and the Havana, Anderson and Sumatra. This will at once withdraw eleven boats from the lumber trade.

A new tariff sheet will be issued Nov. 12 by the Northern Steamship Co. in which the rate on flour and other grain products from Duluth and West Superior to New York is raised from 17½ to 22½ cents per 100 pounds. This is the difference between the lake and rail rate.

DETROIT, MICH.

Special Correspondence to The Marine Record.

The schooner Reuben Doud has gone into winter quarters here.

The ferry steamer Excelsior was placed in the Detroit drydock to undergo a thorough overhauling for the winter traffic on the river.

As there is little doing in the tug business, Capt. Alex Ruelle has sent the tug Grace E. Ruelle, named after his daughter, to put in the balance of the season in the fish business at Put-in-Bay.

When the steamer Iron King arrived here after her collision with the Baldwin, it was expected that she would show some damage, but owing to careful handling in a tight place the King escaped almost unhurt.

The steamer S. S. Wilhelm will be sold at public auction on Friday, Nov. 16. Mr. A. McVittie is the trustee of the property and the sale will take place at the post-office building at 10 o'clock a. m. on the above date.

Capt. F. B. Hackett has received instructions from the dominion government to remove the wreck of the schooner R. J. Gibbs, sunk in Lake Erie six miles from Bar Point in the spring of 1892. The work will be done as rapidly as possible.

Capt. George McLeod, representing the underwriters at the wreck of the steamer S. C. Baldwin, sunk off Marine City, reports that the deck load of lumber wil be taken off, when he thinks tugs will be able to tow the sunken boat into shoal water.

The tug Crusader, which was burned to the water's edge at the Soo Tuesday morning with the loss of two lives, was built at Port Huron in 1874 and was owned by the Grummond line of this port. She was rated B1 and was valued for insurance purposes at $12,000, with fire insurance of $7,000.

The board of assessors are after taxes at a great rate and have actually levied on the belongings of an officer of the corps of engineers, U. S. Army, a resident who is liable to be removed to another district or detail at the pleasure of the war department. This seems like sweeping in the ducats in anything but an equitable way, and smacks a good deal of New York or Chicago instead of Detroit methods.

In an action brought before the United States district court this week Judge Swan handed down an opinion which decides that a piledriver is not a vessel for commerce or navigation. A suit was brought against the piledriver E. O. A., of Alpena, under the admiralty act, to recover the value of supplies, principally household articles, to the family on board. The judge declares that the court has not admiralty jurisdiction, because the vessel is not intended for purposes of navigation; even the engine that propels it is chiefly used to drive piles.

Mr. Frank E. Kirby, consulting engineer, and Mr. Gilbert N. McMillan, secretary and treasurer of the Detroit Dry Dock Co., will sail for Europe on the Cunard steamer Lucania, Nov. 17. It is the intention of these gentlemen to visit foreign shipyards and learn the best practice in vogue in every department of ship and engine building as carried out over there. These periodical visits to learn what other large shipbuilding interests are concerned in is of the utmost practical benefit to the principals of an industry that desires to keep up with the times, or perhaps a little ahead in some particulars and specialties of design, material and construction.

Capt. Byrne, of the steamer Owego, was examined here before the United States commissioner on the charge of dumping ashes into the St. Clair Flats canal, and on motion of the assistant district attorney was discharged One of the government employes at the canal testified positively to the offense having been committed and that he hailed Capt. Byrne at the time and warned him that he would get into trouble. For the defense Capt. Byrne admitted hearing the man hailing him from the pier and sent the second mate to see if any ashes were being dumped. The mate told how the men denied having thrown any ashes in the canal. A negro fireman swore positively that he stood within 15 feet of the chute all the time the boat was passing through the canal and that no ashes were dumped during that time.

CHICAGO'S LAKE FRONT.

The great lake front case, by which it is hoped to wrest from the Illinois Central its grasp on the extensive piers constructed on the lake front, at Chicago, is now before E. B. Sherman, master in chancery for the United States Circuit Court. At the close of the hearing on Saturday the case was adjourned until Friday next.

The hearing was begun Thursday with the production by John H. Hamline, attorney for the people, of copies of the original surveys of the harbor on the lake front. Some of these were made in 1857, 1862 and on subsequent dates. The charts show most minutely the depth of water at different places along the shore line, and run out into deep water. The contour of the shore line is also given exactly as the engineers found it, as are also the marks on shore for a short distance back from the water edge.

At the morning session Capt. J. S. Dunham testified that he settled in Chicago in 1854 and engaged in the towing business. The track of vessels was around the sand bar which had formed at the end of the north pier and extended across the mouth of the river and south to Van Buren street. Vessels were towed along where the piers of the Illinois Central were afterwards built and where there was a good depth of water. The track was used until late in the 60's or early in the 70's, when the government cut the bar away and extended the north pier. The south pier was extended across the old course for vessels, and when the breakwater was built the old Van Buren street entrance was abandoned. Then it was the Illinois Central filled in the land from the east end of the south pier south in a straight line to Randolph street for the east boundary, and from this point to the shore line as the south boundary. They built the two slips which run east and west when they made this land.

In answer to a question, Capt. Dunham said that navigable water is any water that can be used for the navigation of vessels, and embraces all depths of water to the shore line.

The value of the land now occupied by the Illinios Central, but which under the Supreme Court decision may revert to the State of Illinois, runs into the millions. The only question at issue is whether the land was built into navigable waters or not. After the testimony has all been taken by the master in chancery the case will go before Judge Grosscup for his decision.

U. S. LIFE SAVING SERVICE ON THE LAKES.

New York, Grand Haven and San Francisco are the three distributing points of supplies for the life saving service of the United States. There are three life saving service districts on the Great Lakes, ninth, tenth and eleventh. The superintendent of the ninth district is located at Buffalo, and his territory consists of the American shores of Lakes Erie and Ontario. The tenth has for its territory the American shores of Lakes Huron and Superior, and its superintendent is located at Sand Beach. The eleventh consists of 26 stations upon the shores of Lake Michigan and Green Bay, with Nathaniel Robbins, Sr.. of Grand Haven, superintendent. All the requisitions for supplies for the stations of the three districts pass through his hands, and many of the articles supplied to the 26 Lake Michigan and Green Bay stations pass through the Grand Haven headquarters. The law requires that these stations shall be kept open from the opening to the close of navigation, and leaves it with the superintendent of the district to decide when the opening and closing of navigation occurs at the stations in his district. Superintendent Robbins has set the time in his district as follows this season :

Beaver Island, November 30; North Manitou, November 30; Point Betsy, December 5; Frankfort, December 5; Manistee, December 5; Point Sable, December 5; Ludington, December 10; Pentwater, November 30; White River, November 30; Muskegon, December 5; Grand Haven, December 10; Holland, November 30; South Haven, November 30; St. Joe, December 5; Michigan City, December 5; South Chicago, December 5; Chicago, Jackson Park, December 5; Chicago harbor, December 15; Evanston, November 30; Kenosha, November 30; Racine, December 5; Milwaukee, December 15; Sheboygan, (Wis.) December 5; Two Rivers, December 5; Kewaunee, November 30; Sturgeon Bay canal, December 5.

Twenty-three of these stations have seven men each during the season that draw a salary of $65 a month, and a keeper who receives $900 a year. Chicago and Michigan City each have eight men and a keeper, and Beaver Island is kept up by volunteers who receive no pay.

A NAPOLEONIC SECOND MATE.

There is a vigorous little second mate on one of the steamers of the Graham & Morton Line, sailing out of Chicago. A rather amusing story about the mate which the Chicago *Herald* is responsible for is as follows: "This versatile and vigorous second dickey is not large nor oer formidable in appearance, but he can outswear any man that ever took service on the Mississippi in the old days. He has more new and abusive things to say to the men and more new ways to garnish his directions as to where a bag of potatoes or a basket of melons should be placed than any other man on the lakes.

And the men who have worked for him for a time get so they don't care what he says. They get along with him by treating his language as so much airy persiflage and doing their work regardless. But now and then there is a new man and it takes him some time to be broken in. And while he is at it he is conscious that all the old hands are laughing at him and wondering whether he will take it philosophically and pay no attention or whether he will be stung into protesting. Casey is one of the old hands. He is a very powerful man and exceedingly useful in a "scrap." But the mate dominated him after a day or two of competitive cussing and he has become so docile that he will do whatever the officer commands him.

The other day they picked up a new man at the Michigan side and he helped to load the freight, but he did not like the abuse of the mate. He was willing to work, but he hated to be sworn at. He was a "good man" himself and he saw no reason for passively submitting, so, while the crew were hurrying the load out of the boat the other morning and that effective young man was swearing in an entirely original manner at whoever came in sight, the new man threw down his load of peaches and swung around in the very flame of one of the most sulphurous cussings.

"Here," said he, "you can't cuss me that way unless you're a mighty good man. I've taken all I'm going to. I can hammer the life out of you and I'm going to do it. Get ready!"

Things looked very squally for the second mate for a moment. He had no earthly chance against the roustabout. Yet he had his position and his reputation to maintain. And he did it like the general he is.

"Casey!" he called, waving his hand in a lordly manner, "come down here and whip this man for me. Get a hustle on you there with them apple barrels, you"—and there he went again with a stream of profanity. He had turned entirely from the angry deckhand, turning him over to Casey without a thought further.

Casey came to obey him, but the new man recognizing something like genius in the little man before him, gradually loosened a smile and went back to work.

REPORTED BY THE LOOKOUT.

Albert Artis, second cook of the steamer Castalia was drowned in a slip at Ashtabula Saturday night, The body was shipped to Amherstburg for burial.

The schooner Mineral State loaded with coal stranded on South Manitou Island, south of the lighthouse, Saturday night. The steamer Susie Chipman released her and followed her to Glen Haven.

The steamer Osceola has been chartered by the Detroit, Grand Haven & Milwaukee railway to transfer their passengers and freight between Milwaukee and Grand Haven during the winter.

Judge Ricks, of the United States Court, issued an order on Monday at Toledo, directing that the steamer Dove be sold by the United States marshal and the proceeds applied towards paying the creditors.

When the big steamer Centurion and the new steamer Globe, the latter on her first round trip, passed Port Huron, the Centurion was about fifteen minutes ahead and when they went by Detroit they were together.

On her last trip down from Lake Michigan the schooner John T. Mott, while getting up anchor in Traverse Bay during heavy weather, lost a seaman named William Lang overboard. He was an Englishman and shipped at Sandusdy Sept. 17.

A large warehouse owned by the Hannan Towing Co., Ogdensburg, N. Y., was destroyed by fire on Sunday night. The steamer Plum, lying at the dock, was badly scorched. The Plum was burned a year ago and was lately rebuilt. A yacht owned by H. G. Chandler was also burned and sunk.

A concerted move is being made on the part of responsible people to put the U. S. Life Saving Service on the same footing as the army and navy, that is, to have those in the service retired for age and disability on half pay, and to create a fund for the benefit of the sick-disabled or retired life savers or their families.

Duluth brokers claim that the cause of the continued dullness in wheat shipping lies in the fact that immense shipments are being made from Fort William. The wheat shipped from there, they state, is sold for 2½ cents less than American wheat and is shipped through New York in bond to Liverpool and other foreign ports

It is now announced that the damage to the Kittie M. Forbes by fire at Duluth a few days ago will be about $7,000. About sixty feet of her main deck forward was burned off and seventy feet of the upper deck forward. Other parts of the vessel were also more or less damaged. Capt. McLeod conducted the survey at Duluth in the interest of the underwriters.

It has been definitely decided by the uninsured owners and the underwriters holding risks on the steamer Neosho, badly damaged while stranded on Spectacle reef, Lake Huron, that the cost of repairs and her present valuatiou is sufficient to constitute a constructive total loss. It has therefore been determined to sell her as she now lies in Milwaukee harbor to the highest bidder.

Predictions regarding the probable early or late close of navigation are being made, as usual, and while some expect an early close, the majority seem to incline to the other side. The request of the Lake Carriers' Association that the light-house board leave the buoys out until December 10, shows that they expect to keep vessels on the lakes as long as the ice will permit, and fully as late as in former seasons.

Divers who have made an examination of the schooner Hartford, which foundered with all hands in a recent gale of wind below Oswego, Lake Ontario, show that her hull is in good condition but that the deck is badly broken by the swelling of her wheat cargo. The body of Mrs. O'Toole, the wife of the captain, was found several miles from the wreck. The schooner lies in fifty-two feet of water, but the principal owner says an attempt to raise her will be made in the spring.

Capt. McDonough, of the steamer Hudson, which towed the steamer D. M. Wilson to her present location off Alpena, where she foundered, charges the crew of the Wilson with cowardice. He believes that the crew had no reason for abandoning the boat so soon. He says he marshalled part of the Wilson's crew and part of his own, got up steam and towed the Wilson from 8 o'clock in the morning until 2:30 in the afternoon. Once while on the way the mate raised the cry that she was sinking, when the crew took to the lifeboats and did not return.

CORRESPONDENCE.

☞We do not hold ourselves responsible in any way for the views or opinions expressed by our correspondents. It is our desire that all sides of any question affecting the interests or welfare of the lake marine should be fairly represented in THE MARINE RECORD.

THE UNIQUE'S ENGINES.

ST. CLAIR, MICH., Nov. 3, 1894.

To the Editor of The Marine Record:

An item speaking of the steamer Unique was published in THE RECORD, Nov. 1st, which contains the following sentence: "The engines, built by the Frontier Iron Works, are perfect in every particular and show a very high class of work, but there has been more or less difficulty with her boiler ever since her trial trip." A person reading the item referred to would get the impression that I had used this language or something like it, whereas the truth is I never made such a statement nor have I used language that can be construed to give that meaning. I wish you would publish this and set me right before your readers. Yours truly,

C. MCELROY, Managing Owner.

RULES OF ST. MARY'S FALLS CANAL.

CHICAGO, ILL, Nov. 6, 1894.

To the Editor of The Marine Record:

Can you furnish me with the rules of the canal at the Sault Ste. Marie as they relate to vessels? Are there any restrictions about how and where a vessel is to be moored, and can two or more lay abreast while waiting to lock through? An early reply through the columns of THE RECORD would be appreciated.

Yours truly, D. M. L.

The following is a literal copy of the rules as given to vessels by the canal superintendent in accordance with the provisions of section 7 of the act of congress approved July 5, 1884:

RULE 1. The movement of all vessels, boats and other floating things in the canal and locks shall be under the direction of the superintendent and his assistants.

RULE 2. All steamers desiring to use the locks shall signal for the same by two long and two short blasts of the whistle.

RULE 3. All tows shall enter and pass through the canal with tow lines less than four hundred feet in length.

RULE 4. In passing the canal, vessels or boats belonging to the United States Government shall have precedence over all others. All registered merchant vessels shall pass through the canal and locks in the order of their arrival at the canal, unless otherwise directed by the superintendent or his assistant in charge. Unregistered craft will not be locked separately unless specially permitted.

RULE 5. All boats waiting above the locks for lockage must be kept at least 400 feet above the upper gates; and those waiting below the locks must be kept at least 200 feet below the lower gates.

RULE 6. Masters or clerks of vessels or boats shall report in person to the office of the superintendent on each passage, and make such statement of passengers, freight and registered tonnage as he may require.

RULE 7. No business, trading or landing of freight or baggage will be allowed on or over the canal piers or lock walls, except such small articles as may be readily carried in the hand, so as not to delay navigation or obstruct the operating of the locks.

RULE 8. Vessels or boats may be moored to the piers only when specially permitted by the superintendent, and then only in such places and for such times as he may direct.

RULE 9. No material of any kind shall be thrown into the canal. Flues shall not be cleaned in the locks.

RULE 10. All persons are prohibited from willfully or carelessly damaging the canal, or any part thereof.

RULE 11. All boats using the canal must be free from projecting iron or rough surfaces that would be liable to damage the lock walls or canal piers.

RULE 12. No vessel or boat shall in any way obstruct the canal or delay in passing through, unless permitted to do so by the proper authority. The neglecting of any lawful order shall be construed as obstructing the free navigation of the canal.

EXTRACT FROM ACT APPROVED AUGUST 14, 1876.

SECTION 3. * * Any person who shall wilfully and unlawfully injure any pier, breakwater or other work of the United States for the improvement of rivers or harbors or navigation in the United States, shall, on conviction thereof, be punished by a fine not exceeding one thousand dollars.

EXTRACT FROM ACT OF CONGRESS, APPROVED JULY 5, 1884.

SECTION 7. That it shall be the duty of the secretary of war to prescribe such rules and regulations in respect to the use and administration of the Des Moines Rapids Canal, the St. Mary's Falls Canal and the Louisville and Portland Canal as in his judgment the public necessity may require, which rules and regulations shall be posted in some conspicuous place for the information of the public. Any person knowingly and wilfully violating such rules and regulations shall be liable to a fine not exceeding five hundred dollars, or imprisonment not exceeding six months, to be enforced by any District Court of the United States within whose territorial jurisdiction such offense may have been committed.

Published by order of the secretary of war.

O. M. POE,
Colonel of Engineers, Bvt. Brig. Gen., U. S. A.

AMPLITUDES.

The following approximate amplitudes of the Sun's rising will be given each week in this column during the season of navigation: A second bearing of the Sun may be taken at sunset by reversing the bearings to read west instead of east, as, for example, E. S. E. for a sunrise bearing would read W. S. W. for a sunset, or E. 25° S. to W. 25° S.

LAKE ERIE AND S. END LAKE MICHIGAN LAT. 42° N.

Sunrise.	Bearing (degrees.)	Bearing (points.)
Nov. 13	E. 25° S.	S. E. by E. ¾ E.
Nov. 17	E. 26° S.	S. E. by E. ¾ E.

LAKE ONTARIO, S. END HURON AND CENTER LAKE MICHIGAN LAT. 44° N.

Sunrise.	Bearing (degrees.)	Bearing (points.)
Nov. 13	E. 25° S.	S. E. by E. ¾ E.
Nov. 17	E. 27° S.	S. E. by E. ⅝ E.

N. END LAKES HURON AND MICHIGAN, LAT. 46° N.

Sunrise.	Bearing (degrees.)	Bearing (points.)
Nov. 13	E. 26° S.	S. E. by E. ⅝ E.
Nov. 17	E. 28° S.	S. E. by E. ½ E.

LAKE SUPERIOR LAT. 48° N.

Sunrise.	Bearing (degrees.)	Bearing (points.)
Nov. 13	E. 28° S.	S. E. by E. ½ E.
Nov. 17	E. 29° S.	S. E. by E. ⅜ E.

With a compass correct magnetic, the difference between the observed and true bearings will be the variation for the locality. If there is any deviation on the course the vessel is heading at the time of taking the bearing the result after the variation is applied will be the amount of deviation on that course.

A SOUTH CHICAGO ELEVATOR.

The new elevator of the Calumet Elevator Co. at South Chicago has received its first grain for storage, and it is expected that shipments will begin within a fortnight. It has a capacity of about 1,000,000 bushels and adds greatly to the growing grain trade of the Calumet River. The grain firm of Bartlett, Frasier & Co. are largely interested in the enterprise, and the elevator will be known as the Bartlett & Frasier house. This means that shipping will desert the crowded Chicago creek to the capacity of the new elevator, and more still will follow.

A DELAWARE SHIP CANAL.

The board recently appointed by the president, consisting of Gen. T. L. Casey, chief of engineers, Col. W. P. Craighill, engineer corps, Capt. George Dewey, of the navy, and Mendes Cohen and J. A. Porter, civil engineers, to select a route for a ship canal to connect the waters of Delaware and Chesapeake Bays, have elected Gen. Casey as president of the board.

The object of the board is to select a route which will give the greatest facilities to commerce and be best adapted for national defense, from surveys already made. The question of defense is of great importance as the proposed canal will allow torpedo boats and war vessels of small size to run from New York to Norfolk by an inland route, which would be a great advantage in time of trouble Besides being of great use in time of war the proposed canal would bring New York, Philadelphia, Baltimore and Norfolk much nearer by avoiding the route along the peninsula, and it would shorten the route between Baltimore and the ports of Europe. The board has seven or eight surveys to consider and whatever recommendation it agrees upon will be made to Congress as a basis for legislation.

BILLS OF HEALTH.

Secretary Carlisle has issued a circular in regard to consular bills of health from Canadian and Mexican ports, in which he says, quoting the act of Aug. 18, 1894:

"Under the above act, vessels plying between ports on the St. Croix River, the St. Lawrence River, the Niagara River, the Detroit River, Lake St. Clair and St. Clair River and the St. Mary's River and adjacent ports in the United States; also Mexican ports on the Rio Grande River and adjacent ports in the United States, are exempt from the provisions of section 2 of the act granting additional quarantine powers, and imposing additional duties upon the marine hospital service, approved February 15, 1893, which requires vessels clearing from a foreign port for a port in the United States to obtain from the consular office a bill of health. During the prevalence of any quarantine diseases at the foreign port of departure, vessels above referred to are required to obtain from the consular office of the United States or from the medical officer of the United States, when such office has been detailed by the president for this purpose, a bill of health, in duplicate, in the form prescribed by the secretary of the treasury, in quarantine regulations of the United States, 1894."

FOR THE PRESERVATION OF METALS.

At the Montreal meeting of the American Society of Mechanical Engineers, an interesting paper was read on methods for preserving metal used in pipes, roofs, bridges, poles, construction work, etc. In conclusion, the whole question of how best to protect iron and steel from corrosion in all the varying conditions that the wants and usages of to-day demand, seems to resolve itself into several "dont's," as the best method of answering it, to wit:

Don't have any scale on the metal.

Don't paint it with anything but pure linseed oil and oxide of lead or graphite paints.

Don't forget that frequent inspection and care are very necessary.

Don't let the cost and interest accounts be the governing factors in the case of protecting any metal structure on whose continuity and strength human life and safety depend.

In comparing the two paints recommended, it may be well to add that a properly made graphite paint should prove more durable and a better protector than oxide of lead. Graphite has a strong affinity for metal surfaces, and experienced painters claim that even where light colors are desirable, graphite paint should be used as a priming coat. Again, graphite is impervious to the action of heat, cold, sea air, acid or alkali fumes, which are more or less destructive agents to lead paints.

The Joseph Dixon Crucible Co., Jersey City, N. J., have manufactured a pure linseed oil and graphite paint for over 25 years, and have some very convincing testimonials of its value.

VISIBLE GRAIN SUPPLY.

The stocks of grain in Chicago elevators last Saturday evening were 25,327,000 bushels of wheat, 1,139,000 bushels of corn, 1,482,000 bushels of oats, 160,000 bushels of rye, and 70,000 bushels of barley. Total, 28,178,000 bushels of all kinds of grain, against 23,070,000 bushels a year ago. For the same date the secretary of the Chicago Board of Trade states the visible supply of grain in the United States and Canada as 80,027,000 bushels of wheat, 2,658,000 bushels of corn, 9,373,000 bushels of oats, 444,000 bushels of rye, and 3,810,000 bushels of barley. These figures are larger than the corresponding ones a week ago by 1,837,000 in wheat and smaller by 101,000 in corn. The visible supply of wheat for the corresponding week a year ago increased 2,069,000 bushels.

NOTES.

THE "whaleback" steamer launched last week from the Pacific Coast shipyard of the American Steel Barge Co. was named the City of Everett. She hails from Port Townsend, Wash., and her tonnage is 1,935 net, 2,556 gross.

ACCORDING to the latest reports of the Director General of the merchant navy, there are registered in Italy no less than 10,000 certified shipmasters and mates and 7,900 marine engineers and firemen, while a still larger number of engineers and certified firemen are in command of the numerous land engines, working in all the industrial and manufacturing districts of Italy. Moreover, there are some 1,800 officers of the royal navy belonging to the naval construction staff and engineering department, not considering 5,000 people of the stoker class.

NOTWITHSTANDING the Bering Sea sealing regulations, the fleet out of Victoria, B. C., has made the greatest catch on record this year. It is further expected that next season when the white hunters have become expert in the use of the spear, the take will probably reach 100,000 skins at least. In 1893 the Victoria fleet took about 70,000 skins, which was the best catch recorded to that date. This year the total is 87,583, and fewer schooners went out than for some years.

OBSTRUCTING CHICAGO RIVER.

Capt. W. L. Marshall, corps of engineers, U. S. Army, stationed at Chicago, has notified the commissioner of public works that the obstruction to navigation in the new city bridge building at Van Buren street must be removed at once. Marine men claim the abutments of the new bridge at Van Buren street are encroaching on the channel of the south branch of the river eighteen to twenty feet, and if the city had been allowed to complete the bridge as it is being built it would have been impossible for two boats of large size to have passed each other in that part of the river. They unite in commending Capt. Marshall's action.

The bridge at Van Buren street is to be of the bascule type and will have no center pier. Instead of swinging like some of the other bridges, one-half of the bridge is lifted in the air on each side, leaving a clear channel for the passage of boats. The permit granted by the secretary of war provided for a draw 100 feet wide in a straight line with the river. The bridge of the Metropolitan elevated railroad, just above the street bridge, is to be of the same character. It is also said this bridge has abutments extending into the river further than the permit specified, and that the railroad company will have to change this also.

"The permit of the street bridge at Van Buren street specifies that the draw shall be 100 feet wide in a straight line parallel with the banks of the river." Capt. J. S. Dunham said: "Capt. Marshall and I went to the bridge and carefully measured the draw and found the channel was being encrouched upon materially. After the abutments were built, of course, piles were driven around them for fenders against passing boats, and these take up several feet on each side. Inside of these fenders the draw is only ninety-two feet from side to side. But the bridge has not been built so the draw is parallel with the river, but at right angles to the street. At that point the river runs somewhat east of south, so the real opening for boats bound up and down the river is not over eighty feet. Inasmuch as the permit states plainly the draw must be 100 feet wide in a straight line with the river this makes altogether an obstruction to navigation twenty feet wide. It is my opinion that the permit to build the bridge did not allow for an abutment the outer side of which was not parallel with the river bank. The government never has work done this way, and I see no reason for an exception to the rule in this case. We also found that the abutment to the elevated railroad bridge, just above Van Buren street, projected out into the river too far, and I think this will be changed also. Everybody has a desire nowadays to steal from the river whenever there is an opportunity, and marine men will be grateful to Capt. Marshall for having put his foot down so hard on this latest steal."

PITTSBURG AS A SHIPBUILDING CENTER.

Pittsburg is the latest aspirant for a steel barge works and Capt. McDougall, of Duluth, has been in correspondence with citizens of that place relative to the question of a shipyard site. The *Commercial Gazette*, of Pittsburg, prints a pretty picture of the condition which will exist when the proposed Ohio and Lake Erie canal shall be built. It says: "Should the canal be built and should Mr. McDougall locate his establishment here he would enlarge it and go to work making the big lake steamers which ply the lakes. He is the builder of the wonderful steamer Christopher Columbus, which so many persons will remember as having seen at the World's Fair. His idea is that if the canal is a success he can do a regular ship-building business here, constructing them of various sizes, from the whaleback barge to the palace steamers of 2,500 to 3,000 tons. He wauld also build all kinds of river craft and his vessels would be seen from the gulf to the lakes, and a new and important industry would be added to Pittsburg's list. If everything ends as successfully as has been the beginning, it will not therefore be many years before boats will leave New Orleans, pass up the great Mississippi River to the Ohio, pass through the canal at Louisville, Ky., touch at Cincinnati, proceed further to Wheeling, and, passing under the Pennsylvania Railroad Co.'s bridge at Steubenville, land next at Pittsburg. And thence, laden with tons of commerce gathered along the route, steam down to the Davis Island dam, pass through the canal lock there, be swung sideways through a pool or reservoir and into the first lock of the great ship canal. Then, for fifty miles they will travel through the canalized waters of the Mahoning and Beaver Rivers into canal proper, through more locks and up hydraulic lifts and finally through rugged, wild and picturesque scenery they will emerge into some snug harbor and the blue waters of Lake Erie. Again, they will continue their long journeys to Erie, Cleveland, Chicago and all the lake ports."

A CANAL QUESTION.

Major Jones, of the United States engineer corps, is reported as saying that if a canal is constructed from the head of Lake Superior to St. Paul there would be no current toward St. Paul, and that if the canal followed the Mississippi River route there would more likely a flow of water the other way. The St. Louis River would be of great advantage to Duluth, did it contain more water, and should the Mississippi be turned into it Duluth and the head of the lake would have a manufacturing power of immense value.

A LARGE CANADIAN CONTRACT.

A dispatch from Montreal states that the big contract on the Lachine Canal recently secured by F. B. MacNamee has been transferred to Charles F. Dunbar and H. T. Dunbar, of Buffalo, N. Y., and M. Sullivan, of Erie, Pa. Although the Dunbars and Sullivan have handled immense contracts at Port Colborne, on the Welland Canal, at the Limekiln Crossing and at Sault Ste. Marie and Hay Lake, this Lachine contract is the bigbest thing they have yet tackled. Messrs. Harry T. Dunbar and Sullivan will have active charge of the work, Charles F. Dunbar furnishing the capital. It will cost the firm $50,000 to remove their plant to Lachine and place it in position to begin operations.

ABSTRACT OF BIDS FOR GOVERNMENT WORK.

DREDGING.—Following is an abstract of bids for dredging in Occoquan and Aquia Creeks, opened by Major Charles E. L. B. Davis, corps of engineers, October 17:

Occoquan Creek.—Thomas B. Morgan, 1341 Q street, Washington, D. C., material deposited on sides of channel, 20 cents per cubic yard; material removed in scows, 40 cents.

Aquia Creek.—Thomas P. Morgan, 15 cents.

STONE.—Following is an abstract of bids for furnishing riprap stone for Occoquan Creek, Va., opened by Maj. Charles E. L. B. Davis, corps of engineers, Oct. 17:

Peter & George McDonald, Manchester, Va., $1.27 per cubic yard. Charles G. Smith & Son, 3220 Water street, Washington, D. C., $1.33⅓. E. G. Gummel, Eckington D. C., $1.46. Wm. D. Colt, 1022 17th street, Washington, D. C., $1.49.

FOR IMPROVING ROUNDOUT HARBOR, N. Y., OPENED OCT 30, 1894.

Names of Bidders.	Address.	Spruce Piles per Lin. Ft	Oak Piles Per Lin. Ft.	Yellow Pine Per 1000 ft. b.m.	Tie Rods and Screw Bolts Per pound.	Bolts, Spikes Washers and Chain or Cable Per pound.	
Joseph L. Powley,.	Rondout, N. Y....	.20	.13	$40 00	.06½	.05	$ .95
*Richard Parrot ..	Newburgh, N. Y.	.20	.14	38 00	05	03	.69
Frederick Kelly...	Brooklyn, N. Y....	.25	.18	47 00	.04½	04½	,97
Frank Pidgeon....	New Yor<, N. N.	.38	.28	40 00	.04	04	1.50
William Parrott...	Newburgh, N. Y..	.25	.13	40 00	.04½	.04½	1.10

* The lowest bi .

SALARIES OF STEAMBOAT INSPECTORS.

The supervising inspector general of steamboats, James A. Dumont, states in his annual report that the salary grade which he recommended in his previous annual report has been given due attention by congress and the act relating to an equalization of the salaries of the officers of the service has been passed by the Senate and reported favorably by the committee having it in charge in the House of Representatives, it is now on the calendar of the House, and will no doubt be favorably acted upon at its session beginning in December next, as the bill is an equitable one, to which no just objections can be made, and none have been made except in the interest of a few officers in the service whose salaries would be slightly reduced if the bill should become a law, who seem unduly willing to perpetuate a law giving them two and a half times the salary of other officers rendering four times the amount of service that they themselves render, an injustice it seems impossible congress will longer permit.

NOTICE TO MARINERS.

UNITED STATES OF AMERICA—NORTHERN LAKES AND RIVERS—NEW YORK.

ROCK ISLAND LIGHT STATION.—Notice is hereby given that the tower at Rock Island light-station, on Rock Island, St. Lawrence River, has been increased 5 feet in height, and the light is now visible above the roof of the keeper's dwelling in the direction of the dock at Thousand Island Park.

At the close of navigation this season the fixed white reflector light shown from the veranda of the keeper's dwelling in the direction of the dock at Thousand Island Park will be permanently discontinued.

By order of the light-house board.

JAMES A. GREER,
Rear-Admiral U. S. Navy, Chairman.

Office of the Light-House Board, Washington, D. C., October 31, 1894.

The buoys in the rivers and the light-ships of the district will be kept in position up to December 10th, if the weather will permit.

CHAS. V. GRIDLEY, Com. U. S. N.
Inspector 10th L. H. District.

Notice is hereby given that the front range light at Kewaunee, Wis., has been discontinued. The pierhead tower has been moved to a point 3 feet from the end o the pier, and the former rear light is exhibited from this point without change of characteristics.

By order of the light-house board.

COMMANDER J. H. DAYTON, U. S. N.
Inspector 9th L. H. District.

UNITED STATES OF AMERICA—NORTHERN LAKES AND RIVERS—WISCONSIN.

KEWAUNEE PIERHEAD RANGE LIGHT-STATION.—Notice is hereby given that on or about November 7, 1894, changes as follows will be made in the Kewaunee Pierhead range lights:

KEWAUNEE PIERHEAD RANGE, FRONT LIGHT—The fixed red tubular-lantern light, exhibited from the end of the elevated conduit on the outer end of the N. pier, harbor of Kewaunee will be discontinued.

KEWAUNEE PIERHEAD RANGE, REAR LIGHT—The sixth order fixed red light will be moved 300 feet nearer the outer end of the N. pier, harbor of Kewaunee.

By order of the light-house board.

JAMES A. GREER,
Rear-Admiral, U. S. Navy, Chairman.

Office of the light-house board, Washington, D. C., November 6, 1894.

ANOTHER WINTER ROUTE.

The two steamboats of the Graham & Morton Line, the Chicago, now on the Chicago route, and the R. C. Reid, will after December 1, during the winter furnish lake transportation between Milwaukee, Wis., and Benton Harbor, Mich., in the interest of the Chicago & Erie, Lake Shore, Kanawha Dispatch, Central States Dispatch, Red Line, Empire Line, West Shore, Nickel Plate and other railway lines connecting with the Big Four system. This is the freight route the Milwaukee & Eastern Line opened up two winters ago, but found too much cold weather and ice to make it a profitable enterprise for them. The steamboat company have leased the 700-foot Lackawanna docks in Milwaukee, owned by Edward Shea, and formerly used by the Chicago & Northwestern Railway Co. It is expected that a third boat will probably be put on this route about January 1st.

THE STADIMETER.

An instrument that will enable a seaman to tell in an instant upon seeing a lighthouse or any well-known mark upon the seacoast just how far his ship is distant from shore, that will inform the captain of a man-of-war how far away his ship may be from another vessel of his own navy, and be of assistance in many other respects where the elements of distance or height are factors, has been submitted to the navy department for trial.

The instrument, which is much simpler, cheaper and easier handled under all conditions than a sextant, is known as the stadimeter and is the invention of Lieut. Fiske, U. S. N., who devised the range finder. The stadimeter is much simpler in construction and operation than the range finder, to which indeed it may serve as an adjunct, but cannot entirely replace as at least one element—either height or distance—must be known to operate it so as to determine the distance.

THE MARINE RECORD

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CLEVELAND, O., NOVEMBER 8, 1894.

GERMANY stands next to Great Britain in the merchant marine shipbuilding industry.

THE competitive tests between the cylindrical form of boiler fitted with Howden's forced draft and the Belleville type of water-tube boilers has been declined for the present by the manufacturers of the Belleville.

OUR thanks are due to the supervising inspector general of the U. S. Steamboat Inspection Service, James A. Dumont, for a copy of his annual report as submitted to the secretary of the treasury for the fiscal year ended June 30, 1894.

A CLYDE-BUILT torpedo destroyer has just undergone a preliminary trial trip, and as a result of four runs over the measured mile course her speed was found to be 28.25 knots, or equal to 32.530 statute miles per hour. The same firm have two more of these vessels to build.

THE most cowardly spirit, ill-advised action and troublesome charges which can be lodged against a ship's crew is that of premature abandonment of their vessel. The disposition that ought to be shown when a vessel is in distress is to stick to her until human efforts are no longer available, and further, that a similar force of men cannot succeed where they have failed.

IN looking around for the most advantageous port to winter at several owners have already fixed upon Chicago. The chance of holding grain for winter storage and securing a paying freight on the opening of navigation next spring has of course much to do with the choice of ports. In other instances coal charters are being made giving the consignee an option of ten to twenty days in which to discharge the cargo. This, of course, means a last trip at this time of the year.

COMMANDER W. W. MEAD, U. S. N., light-house inspector stationed at Detroit, has received instructions from Washington to remove the buoys in Lake Huron about the middle of November and substitute winter buoys in their place. Commander Gridley, stationed at Buffalo, will keep the buoys and light-ships in the Tenth District in position up to December 10, if the weather will permit. The latter district covers Lakes Erie and Ontario, and takes in a portion of the Detroit and St. Lawrence Rivers.

OUR thanks are due to Commander C. D. Sigsbee, U. S. Navy, chief hydrographer, for a copy of the International Code of Signals, in use by all nations. All life-saving stations on the lakes are conversant with the code and several steamers are fitted out with the flags, but their use is not so general as might be desired, owing principally to the short distances between reporting stations on the lakes. It would, however, be a wise provision for passenger steamers, at least, to carry the code and book, and we would further suggest that applicants for original licenses should, in future, be examined by the steamboat inspectors regarding their knowledge of the code as well as the semaphore or distant signals.

MUTUAL MARINE INSURANCE.

It is generally known the world over that in the north of England there are a number of vessel owners' associations forming mutual marine insurance clubs. These clubs cover risks from the highest to the lowest, and a small coaster may be indemnified for the loss of even a gaff tops'l, though of course such tonnage does not run in the club or class of the large steamers.

A movement is now on foot among the owners of A1 steel steamers in England to form a separate mutual marine insurance association for their high classed tonnage, as the calls made by the clubs during the past year has borne down heavy on the bestrisks, especially as the result carefully tabulated for the past five years shows that the losses, averages, entrance fees, deferred claims, and laid-up premiums, applying to the steel-built, triple-engined steamers have been found so moderate that a special class is now considered advisable for steamers averaging 1,600 tons and upwards, as by this means it is thought that insurances can be effected much cheaper than at Lloyds, besides, the modern high-classed tonnage would then be freed from the not unfrequently heavy mutual contributions to the clubs rendered necessary to keep up the older vessels. It is perhaps on account of the diversity of grades in tonnage that the mutual plan of insurance has not been adopted on the lakes, yet it has been recently suggested that the modern built high-classed boats form such an insurance association for mutual protection. Under such an arrangement the vessels barred out of the club, (even if a majority of the same owners' tonnage had been enrolled therein), would catch it hard on the rates, for underwriters would by no means like to quote rates of premium on a fleet the best risks of which were taken out and insured elsewhere; again, is it not possible that the old-time companies would underbid even the terms offered by the mutual, or the cost in such an association, as determined after a season's business. There is also the factor of foreign insurance to offset. In this case there are no management or office expenses to meet, only the agents' commission, and this charge would likely be made even under mutual marine insurance auspices.

There is no doubt but that mutual insurance would prove a success if taken a certain class of tonnage, otherwise the club system would never have obtained the hold that it has in the north of England, but what class of tonnage it would be best to consolidate is questionable. As it now looks, and in view of Inland Lloyds eliminating the older and smaller class of vessels, with every probability of the limit being drawn still tighter, it would appear that the best tonnage is enjoying whatever privileges underwriters can stand and forcing the doubtful risks to combine for protection outside the regular lines

WATER FRONTAGE.

The State of Michigan is losing hold of her water frontage as easily as some of the eastern states permitted corporations to shut off their water boundary in times gone past. The "Big Four" Railroad Co. has purchased all the land on the north side of the St. Joseph River between Benton Harbor and the Hotel St. Joseph, thus shutting out citizens from a right of way along the river front. State legislatures should see to it that no right or title to water frontage beyond a leasehold could be acquired by private persons, and this privilege only to be granted under proper restrictions relative to terms of lease, in which the construction of docks, slips, wharves, jetties, etc., and adequate repairs to same when necessary ought to be stated, as well as securing the right of way for vehicular or foot traffic to all citizens along the water front. This question of private citizens and corporations buying up all rights to the lake and river frontage can only be solved by legislative action in each state, and the means to be used to accomplish this result is by nstituting condemnation proceedings for several hundred feet on all unoccupied lands bordering a navigable waterway. As an indication of how derogatory to the best interests of a port private ownership of the water boundary line is, it may be cited that the business men of Boston, Mass., want better docks for the facilitation of commerce than the private owners will build and a proposition now under consideration there is a resolution empowering the purchase by the city of the docks and wharves at a cost of about $10,000,000. The New York municipality is also figuring at this time on expending about $15,000,000 to accomplish a similar result, and even at this enormous expenditure it is figured that the returns to the city would be 12 to 15 per centum on its investment. Acres of water frontage will be acquired on the lakes from this on and it is wrong to saddle future interests with ten to fifteen million dollar deals such as the seaports of Boston and New York are now undergoing. There is yet ample time for the legislature to act in this matter and the water frontage or boundarp of all lake States should be jealously guarded from this time forward.

IT has been decided by the department of justice, Hon. William H. Taft acting attorney-general, September 17 1890, that under the present laws there can be no punishment inflicted on persons making false oaths in the application for officers' licenses, or forging or interlining certificates of license increasing the grade. The supervising inspector-general of steamboats now desires congress to add a paragraph to Section 4,445, Revised Statues, making it a criminal offense for any licensed officers to swear falsely or to change their certificates of competency which is now issued annually. There is no other country engaged in the annual licensing of ship's officers, and it is a waste of time, talent and material for the United States to demand such an intolerable freak of officialism. The examinations are voluntary and free; a license is issued only when the candidate is pronounced competent to exercise the duties of the station which he is certificated for, then why in the name of common sense should officers be compelled to waste half a day and sometimes even more in obtaining an annual duplicate of their licenses. The present system is a good deal too much like taking out a peddlar's license to hawk wares around a municipality for a year; but there is not even that excuse, for in the latter case the peddlar puts up some money for the privilege of competing with storekeepers, but in the case of officers of the mercantile marine no charge is made for the senseless work of duplicating a duplicate form season after season.

AN exodus of Milwaukee vessel owners is expected to take place during the winter. Floating property has been assessed this year by the tax collector at an exorbitant rate and in such a manner as to discriminate between Milwaukee and other ports. This move is in the right direction, but it will be a big loss to the Wisconsin city in revenue, employment for its citizens and to the industries supported by marine patronage. A federal tax is to be enforced on the earnings of vessel property, and if a State, county or municipal tax is to be assessed on the estimated value of a vessel in good paying times, and held at that figure through seasons when vessels can hardly earn enough to pay running expenses, it is small wonder that owners will try to keep their floating property out of debt by registering at ports where moderate tax assessments prevail. It has already been shown that Milwaukee owners paid a larger tax on their vessel property than the Cunard Atlantic Line pays the British government on over $9,000,000 worth of tonnage. Furthermore, this is the wrong time, if ever, to increase taxation on property that carries on the floating commerce of the country and is ill advised action wherever enforced.

THE passing signal, this time in clear weather, has again been responsible for a serious collision and the foundering of a steamer abreast of Marine City on Monday afternoon. From the accounts of the casualty as given by the officers of the boats, a misunderstanding ensued and cross whistles were blown until the craft had got into such a position that a collision was inevitable, and it took place in due course. That steamers should sink each other in broad daylight argues not only a lack of skill but an utter disregard or ignorance of the "rules of the road" by at least one of the vessels, and it is distinctly the province of the steamboat inspection service to place the responsibility where it justly belongs.

FOLLOWING the opening to be made in the west arm of the breakwater at Cleveland, or when such an improvement is completed, steps ought to be taken to improve the present west pier, if such a ramshackle burlesque on pier construction can be called such. This we surmise could best be done by building a sightly pepmanent structure of concrete blocks about one hundred feet to the westward of the present "man trap" nuisance to vessels and disgrace to the entrance of the port. The east pier is a dilapidated eyesore, already partly appropriated for private uses, but there is still a chance for improvements to the westward.

LAKE FREIGHTS.

As predicted in this column last week the ore rate from the head of the lakes went up 5 cents and on Wednesday another 5 cent raise placed the Duluth rate at $1, with almost a certainty of 5 to 10 cents better being paid this week as it is reported that $1.10 is being offered to South Chicago and $1.05 from Ashland. Marquette chartering has been slow all week and Escanaba still rules at 50 cents.

The Chicago grain rates are demoralized and shipments light, figures for the week show barley shipped at 1 cent to Cleveland, 2¼ cents Oswego, ⅞ cents Buffalo. Corn to Port Huron 1 cent; wheat to Buffalo ⅞ to 1 cent. The Fort William rate on wheat is firm at 3 cents and charters for the week have been made at 3 cents from Duluth, an advance of ¼ cent; to Ogdensburg 4¼ cents; Toledo to Ogdensburg, 3⅝ cents. Canal freights from Buffalo have ruled steady at 3 cents on wheat, 2¾ cents on corn, 2 cents on oats and 2½ cents on barley to New York. Lumber freight rates steady at $2 to New York and $1.50 to Albany. Coal rates are steady from Ohio ports to the head of the lakes at 35 cents, with a good deal of advance chartering even at this figure. Chicago 60 cents; Portage and Gladstone 40 cents. The Buffalo 70 cent rate, for which brokers held out so well, has slumped to 60 cents to Chicago, making the going rate 60 cents, Racine 75 cents, Milwaukee 55 cents, St. Clair 40 cents, Duluth 30 cents, Oswego to Duluth 85 cents, Chicago $1.05. The lumber rates from Duluth are nominally $2.25 to Lake Erie ports and $2.50 to Chicago with very little chartering being done; dry lumber, Ashland to Chicago, $2.37½.

MINNESOTA ORE SHIPMENTS.

The last shipments of ore from Duluth and Two Harbors for the present season will, it is said have been made in the next ten days, though a few shipments may be made up till November 20. Figures can now be obtained for the year up to November 1, with an estimate that will not be far from right for the rest of the season. Up to November 1 there had been received and shipped at the Mesaba dock at Duluth 1,240,000 tons. The Iron range at the same date had shipped from its dock at Two Harbors, 1,300,000 tons, a total of a little more than 2,500,000 tons, nor nearly 1,000,000 more than the entire shipments from Duluth and Two Harbors for the whole of last season.

Shipments from now until November 15 are in a measure contingent, but from approximate estimates made by Mr. Filbin and Mr. Greatsinger, authorities on Minnesota mining and ore shipments, they will probably add nearly 200,000 tons to the total of shipments up to November 1. It is expected that 100,000 tons will be shipped from the Two Harbors dock before the close of navigation, and from the Mesaba 60,000 tons.

These figures when added will make the totals for the season: Two Harbors, 1,400,000 tons; Duluth, 1,300,000 tons; total, 2,700,000 tons. The shipments last year were: Two Harbors, 917,000 tons; Duluth, 521,000 tons.

Shipments of iron ore from Ashland, Wis., for the week were 38,931 tons, making a total for the season of 1,688,603 tons.

STAGE OF WATER AT ST. MARY'S FALLS CANAL.

DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.

Depth of water at the St. Mary's Falls Canal for the week ending Nov. 8, 1894:

Nov.	1	8 a. m.,	15	feet	0	inches.	8 p. m.,	14	feet	9 inches
"	2	"	14	"	7	"	"	14	"	9 "
"	3	"	14	"	9	"	"	14	"	8 "
"	4	"	14	"	9	"	"	14	"	10 "
"	5	"	14	"	10	"	"	14	"	9 "
"	6	"	14	"	7	"	"	14	"	6 "
"	7	"	14	"	7	"	"	14	"	6 "
"	8	"	14	"	5	"	"			

ALLEGED ASSAULT.

The master of the steamer James R. Langdon was examined before Commissioner Graves, at Detroit, on Wednesday morning, on complaint of Alexander McRae a sailor, who testified that on October 24 the master asked him to sign articles which he refused to do. He had shipped at Cleveland on the understanding that he was to make a trip to Chicago and back to Marine City, where he was to be discharged. According to the testimony of the seaman, the captain abused him with bad names and hit him twice. The captain further told him he would get no pay unless he signed, but he did finally pay him and sent him ashore.

The captain admitted asking him to sign but denied hitting him, and told him he wasn't worth it. He seized him by the collar, and his nail might have scratched his face, as he afterwards saw blood on it. The mate and other hands testified that they saw no striking. Capt. James Millen certified to the master's reputation for truth and veracity, and the commissioner held him in $200 bonds on his own recognizance.

TACOMA EXPORTS AND IMPORTS.

The secretary of the Tacoma, Wash., Chamber of Commerce finds according to the report of the harbormaster the following exports and clearances for October:

EXPORTS.

	Value
615,537 bushels wheat (foreign)	$251,800
304,000 " " (coastwise)	120,000
35,979 barrels flour	72,153
2,304,390 pounds canned salmon	212,335
5,027,640 feet lumber	61,691
21,900 tons coal	65,700
	$783,679

Inward Registered Tonnage	59,569 tons
Outward " "	42,378 "
Inward Cargo	6,789 "
Outward Cargo	64,379 "

COMPARATIVE TRAFFIC.

Through the courtesy of the superintendent of St. Mary's Falls Canal, we are enabled to present to our readers the usual monthly statement of the comparative traffic for 1893-4 through the canal east and west bound for the month of October:

EAST BOUND.

ITEM.	Designat'n.	Sea. 1893.	Sea. 1894.
Copper	Net tons	9,463	11,564
Corn	Bushels	371,370	104,437
Building Stone	Net tons	1,303	2,325
Flour	Barrels	1.253,407	1,504,096
Iron Ore	Net tons	541,319	863,825
Iron Pig	"	4,816	3,772
Lumber	M.ft.B.M.	111,969	108,274
Siver Ore	Net tons	520	
Wheat	Bushels	6 551,308	7,588,114
Unclassified Freight	Net tons	21,533	33,828
Passengers	Number	568	666

WEST BOUND.

ITEM.	Designat'n.	Sea. 1893.	Sea. 1894.
Coal, Anthracite	Net tons	408,494	66,938
Coal, Bituminous	"		551,289
Flour	Barrels	295	
Grain	Bushels	18,294	3,000
Manufactured Iron	Net tons	6,095	7,754
Salt	Barrels	56,795	31,067
Unclassified Freight	Net tons	39,634	47,977
Passengers	Number	442	469

East bound freight, net tons,	1,472,885
West " " "	678,649
Total	2,151,634

TO RIVAL FRIETSCHE.

Gus Severson, residing at Superior, Wis., is impressed with the idea that a trip from the head of lake navigation to Sweden in a small sail boat would afford a novel and economical way of visiting his relatives in the old world, and as a result has laid his plans to build the required boat. The craft will be 35 feet long, 15 feet beam, and according to present intentions is to have iron ribs, so that she will be a composite built sail boat. Severson expects to have the boat completed by March 1 and will start on his voyage in May, 1895.

NOTICE TO MARINERS.

Notice is given that buoys in Lake Huron will be taken up and winter buoys substituted about the middle of November. The buoys in St. Clair and Detroit Rivers, also light-vessels, will be kept in position as late as weather will permit, By order of the lighthouse board.

W. W. MEAD, Commander U. S. N.,
Inspector 11th Lighthouse District.

SECRETARY WILDE, of the lighthouse board, suggests that Gravelly Island, Poverty Passage and Lansing Shoal be lighted by gas buoys, and the committee on navigation of the Lake Carriers' Association agrees with him.

STATE TAXATION OF VESSEL PROPERTY.

According to statistics furnished by the United States commissioner of navigation, contained in our issue of July 5, it was there shown that the owners of vessel propery hailing from Milwaukee, Wis., paid taxes on their registered floating property more than the British government collected from the Cunard Co. on over $9,000,000 of shipping. It has been further asserted that the assessed valuation of vessel property in Milwavkee for 1893 was $432,960 and this year it has been raised to $909,530, showing an increase of assessed valuation without a corresponding increase of tonnage, amounting to $476,570.

It is now learned that Milwaukee vessel owners have about completed arrangements to transfer their vessel property to other ports, and before the opening of another season a number of fleets will be registered elsewhere and thousands of dollars lost to the city in annual taxes.

The Milwaukee Steamship Co. has issued a circular letter to its stockholders explaining the causes which necessitates removal from the city, and laying before them the plans for the future. For several years, the letter states, the officers of the company have had several and serious difficulties with the city in regard to the assessment for taxation. Despite the protests of owners the amount of valuation for this year was nearly doubled, so that the taxes of the company for this year would amount to about $1,700.

At the suggestion of David Vance, John S. George, W. H. Wolf and F. L. Vance, owners of 1,700 shares of stock, nearly two-thirds of the company, it is proposed to organize a new corporation outside the state of Wisconsin. The stock in the new company is to be the same as in the present company, and stockholders are requested to surrender their stock and receive in exchange a similar amount of stock in the new company. It is estimated, the letter states, that the stockholders will save from $1,000 to to $1,200 in taxes annually by organizing outside of Wisconsin.

It is also reported that the Inter-Ocean Transportation Co. has made arrangements to leave the port. "After May 1, the commencement of the year, you will not see us here," said Manager Ricketson." We simply can't afford to stay here, as our taxes have been raised from about $3,000 to $6,000 and we don't propose to stand it. For the last fifteen years I have been paying taxes right along and almost every winter paid out $20,000 for repairs and winter work to the Milwaukee dock yards. Of course, when we leave the city all this will be lost to Milwaukee. All that my company has ever gotten from the city in return for all the taxes paid was $2,000 and that was for a bit of dredging which the city promised to remunerate us for. It cost us $4,000 and we succeeded in getting back but $2,000.

The Inter-Ocean fleet is composed of the steamships Minnesota, 1,500 tons; Merrimac, 1,290 tons; Massachussetts, 2,000 tons; Manhattan, 2,200 tons; Manchester, 3,000 tons; Maryland, 3,600 tons; and the schooner Metacomet, 1,300 tons. Nearly all of the property is owned in Chicago, and the only cause for keeping the office in Milwaukee was that it was a matter of convenience.

The Fitzgerald fleet will also leave Milwaukee. Mr. Fitzgerald stated that the city would get no more from his company. He did not know how much the company's taxes would amount to this year, as he had been unable to learn, but presumed it would be nearly double that of last year.

Nearly all of the vessels will be registered either in Pennsylvania or New York. In Pennsylvania the vessel owners do not have to pay a single penny of taxation, while in New York the amount is about one-eighth of that in Milwaukee.

The laws of Illinois and New York and Wisconsin with regard to vessel taxation are identical, but in Milwaukee the assessment is nearly eight times as great as it is in New York, according to vessel owners. Even in the other ports of Wisconsin vessel owners claim the assessment is but one-quarter of what it is in Milwaukee.

The vessel owners blame the tax commissioner for the present situation. They state that when the assessment was made a committee called on the commissioner and drew his attention to inequalities in the assessment. The valuation in Milwaukee, according to vessel owners, makes it impossible for them to compete with the eastern fleets, which have practically no taxes to pay. "We don't object to paying twice as much as other vessel owners," said David Vance, "but we do object to paying four times as much as vessels hailing from other ports."

LAUNCH OF THE STEAMER CITY OF EVERETT.

On an eminence gracefully sloping east and west and overlooking an arm of the Straits of Juan de Fuca, with its wooded islands, bold headlands and sheltering bays, stands the picturesque and thriving city of Everett. It is flanked by a growth of lofty pines and cedars and sheltered by mountain ranges; on the east by the towering Silver Cascades, on the west by the Olymphic range, their snowy peaks so cleanly cut and defined against the sky in striking contrast with the dark green, thickly wooded foot-hills. Looking north in Her Majesty's possessions, the "Sentinel," or Mount Baker, can be seen ever clothed in aerial tints, while to the south in hoary grandeur, that king of the Cascade range, old Mount Rarrier or Tacoma. A little more than three years ago, a small surveying party from the east pitched their tents on this peninsula, formed by the junction of Possession Bay in Puget Sound, with the shadowy and emerald tinted waters of the Snohomish River. Here after months of earnest investigation as to the resources of the adjacent bottom land and mountain ranges, sounding the deeps and shallows of the harbor and river for the accommodation of shipping, and carefully considering the advantages of transportation by sea and land, they selected this most desirable locality as a site for a seaport town and city.

The wisdom of their choice is evidenced by the most gratifying results, for within the short space of three years a city of fair proportions and a most promising future, invites inspection of her many profitable industries and improvements.

The citizens of Everett, with pride and pardonable zeal, will call the stranger's attention to their broad avenues, electric street cars and trans-continental terminus, to their massive modern structures of stone and brick, their finely equipped public schools and churches, to their fashionable and well stocked mercantile houses, to their spire topped and picturesque Monte Cristo hotel, commanding a view from every point of the compass, the cleanest and best of hotels; where in its quiet halls and its spacious verandas the traveler will wish to prolong his stay.

Among their industries are the Sumner Iron Works, the Puget Sound Wire, Nail and Steel Works, the largest of its kind on the Pacific Coast, the Puget Sound Pulp and Paper Mills, said to be the most important mill of its kind west of the Mississippi. The smelting works, saw mills and canneries are substantial and partial gifts of the goddess of commerce to this favored young city. And last, but by no means the least, the Pacific Steel Barge Co.'s works, admirably located on a stretch of bottom land east of the sloping peninsula through which flows the clear and navigable waters of the Snohomish River. Here Capt. Alexander McDougall, general manager of the American and Pacific Steel Barge Cos., with headquarters at Superior, Wis., now famous throughout the maritime world as the successful inventor of the type of vessel known as the "whaleback," erected spacious and substantial buildings, planted machinery of the most improved type for modern steel ship building and laid the keel for an ocean whaleback passenger and freight steamer of the most improved type. And on the 24th of October, 1894, in the presence of 10,000 people, the governor and staff of the State of Washington, and the leading citizens of Snohomish and King counties, was successfully launched the steamer City of Everett, amid the deafening cheers of the mighty throng, as the initial step to maritime greatness, a harbinger of prosperity to the young and rising city whose name she bears and honors.

Your correspondent desires to thank superintendent Colderwood, consulting engineer Smith and secretary Thompson, the able and courteous staff of the Pacific Steel Barge Co. at Everett, for many favors and their most successful effort to make the writer's stay at Everett a pleasant one. Also to thank Mr. J. B. Crooker, the trusted guardian of the city's weal, for much valuable information, and that dispenser of good cheer, the attentive and gentlemanly landlord of the Monte Cristo hotel.

A brief account of the dimensions and construction of the ocean whaleback steamship City of Everett, will be of interest to readers of THE RECORD.

Her length over all is 361 feet; her length on the deep load line, 338 feet; beam moulded, 42 feet; depth molded, 26 feet 6 inches; tabular depth, 25 feet; tabular number or cubic feet, 369,096. Her proportions are extreme, having 8 beams and 13½ depths to her length respectively, compensating for same by increased scantlings.

Her engines, built by the Frontier Iron Works, of Detroit, Mich., are vertical, direct acting, triple expansion. Cylinders 24, 38, 64 inches, and 42 inch stroke. She has four boilers of the Scotch type, 11 feet by 12 feet, and eight furnaces. Their safety valves are loaded to 165 pounds. Diameter of propeller, 14 feet, pitch 18 feet. Capacity of bunkers about 400 tons bituminous coal; daily consumption, 24 tons; estimated speed, 12 knots.

She is of medium model, grading between full and sharp, with easy bilges and fair spring on the sheer line. All shell plating butts are overlapped and treble riveted, except the three strakes of deck on either side of hatchways, which have compaired butts with double butt straps treble and quadruple riveted.

She has a 42-inch continuous water bottom, with deep center keelson and five rider keelsons on either side, all properly connected by continuous longitudinal and vertical angles and brace plates. Her frame angles which are spaced 24 inches apart, are joined at the tops, forming a hoop, and when combined with the reverse frames are capable of greater binding resistance than the ordinary frame of the same sectional area. Her quarter pillar stanchions of I steel secured to the main deck beams and to longitudinal girders head and foot. Between the main deck stringer plate and the upper deck hatch ends are two continuous stringer plates supported on either side by strong bulb angles, and in the hold between the main deck stringer and the tank top are two similar stringers; on either side of the ship all plates between the stringer angles are let intercostal and riveted to the shell plating, the vertical space between the stringers not to exceed five feet, while eight feet is allowed by ocean rules.

Her web frames are spaced 16 feet and extend from the tank top to the second stringer of the deck plating, faced with double reverse angles and secured to stringers with double horseshoe plates. There are seven watertight bulkheads, three of which extend to the upper deck, properly supported vertically and horizontally. These include two collision bulkheads, one 10 feet, the other 46 feet from the drumhead or extreme fore-peak. A fully laid steel deck divides the space between the collision bulkheads, and is supported below by a fore and aft bulkhead or center keelson, while panting pillar stanchions on either side to alternate floors support the overhanging bow and deck as well.

The face plate or drumhead is of ¾ steel, and convex, with riveting flange turned on the same; it is supported on the inside by knee-plates connected to stringers and frames forming a massive cross. The deck or whaleback is pierced for five 8 by 10 feet hatchways, equally distributed between the machinery and windlass turrets; at each hatchway a steam cargo winch and pole mast is enclosed by a steel turret. Her saloon and steering deck are well aft, on a raised steel deck supported by turrets and steel pillars. Her appointments are of the latest improved type, the windlass, capstans and steering appliances worked by steam power and electric lighted throughout.

This vessel is built to the rules and scantling tables of the Bureau Veritas for ocean work under the supervision of an inspector of the above mentioned classification society, and will receive the highest class in the Register Veritas. In giving to her this high character for structural worth, the writer does so, confident that she will prove herself worthy of the high class assigned her.

F. D. H.

PROPOSED MICHIGAN IMPROVEMENTS.

The report of the chief of engineers, made public on Saturday, gives the following estimates for river and harbor improvements in Michigan during the fiscal year, ending June 30, 1896. These estimates are based on the reports of the engineers in charge of the work at various places, and are supposed to represent the amounts which can be profitably expended during that period:

Harbors—Ontonagon, $33,000; Marquette harbor, $134,000; Harbor of Refuge at Grand Marias, $100,000; Cedar River harbor, $108,000; Menominee, $15,000; St. Joseph harbor, $115,000; South Haven, $62,000; Saugatuck, $35,000; Grand Haven, $80,000; Muskegon, $150,000; White Lake, $62,000; Pentwater, $45,000; Ludington, $35,000; Manistee, $61,000; Portage Lake, $125,000; Franklin, $51,000; Charlevoix, $53,000; Petoskey, $125,000; Alpena, $5,000; harbor at Sand Beach, Lake Huron, $150,000; Monroe, $11,000.

Rivers—Detroit, no work done during the past fiscal year; estimate, $121,257 for the fiscal year ending June, 1896; St. Clair Flats Canal, estimated cost of canal twenty feet deep, $513,559; Hay Lake Channel, St. Mary's River, $150,000; St. Mary's River at the falls, $483,865; Rouge River, $5,000; Turning Basin in Rouge River, $10,500; Clinton River, $25,000; mouth of Black River, $10,000; Black River at Port Huron, $15,000; Saginaw River, $150,000; waterway from Keweenaw Bay to Lake Superior, via. Portage Lake, $8,000; Menominee River, $10,000.

LAKE BRANCHES MARINE ENGINEERS' BENEFICIAL ASSOCIATION.

Geo. Uhler, President, Philadelphia, Pa.

J. H. Galway, Past President, Detroit, Mich.; W. D. Nelson, Vice-President, San Francisco, Cal.; T. F. Dowd, Secretary, 17 S. Jefferson street, Chicago, Ill.; F. D. Cook, Treasurer, E. Boston, Mass.

1. Buffalo, N. Y., Saturday, 40 Niagara street, J. N. Gregory, 147 Riley street.
2. Cleveland, Ohio, Thursday, Seymour building, J. Kirby, 56 23d street.
3. Detroit, Mich., Wednesday, 11 Woodward avenue, A. L. Jones, 289 Champlain street.
4. Chicago, Ill., Friday, Randolph and Clinton sts., John McElligott, 285 W. Division street.
9. Milwaukee, Wis., Saturday, 115 Reed street, W. E. Elliott, 199 36th street.
27. Bay City, Mich., Friday, K. P. hall, N. P. Slater, 317 Howard street.
37. Toledo, Ohio, Saturday, I. O. O. F. block, E. D. Loek, 516 Walbridge avenue.
39. Erie, Pa., Monday, Friday, F. J. Feeney, 521 W. Third street.
43. Port Huron, Mich., Wednesday, 405 E. Water street, S. G. Morrill, 1031 Wall street.
44. Manistee, Mich., Tuesday, Larson block, H. O'Connell, Water works.
46. Clayton, N. Y., Thursday, P. O., L. O. Kenyon.
47. Sault St. Marie, Mich., Peter Kelley, box 31.
48. Sandusky, Ohio, Thursday, Columbia avenue and Water street, C. C. Smith, Jay and Monroe streets.
51. Muskegon, Mich., Tuesday, Scandinavian hall, J. Cummings, 37 E. Muskegon avenue.
53. Marine City, Mich., Saturday, H. Stone.
54. Charlevoix, Mich., 1st and 3d Thursday, K. L. hall, O. S. Washburn, Charlevoix.
55 Cheboygan, Mich., C. Adams.
67. Saugatuck, Mich., Wednesday, Nei's Hall, G. Harvey.
68. Chicago, Ill., Tuesday, Market and Lake streets, A. C. Harding, 3155 Rhodes avenue.
72. Oswego, N. Y., alternate Mondays, 167 Water street, T. Navagh, 40 Lake street.
73. Green Bay, Wis., Saturday, F. Spencer, 904 Crooks street.
75. Alexandria Bay, N. Y., Friday, Westcott block, A. J. Thompson.
76. Grand Haven, Mich., 1st Thursday, A. O. U. W. hall, (German) E. Scott.
77. Manitowoc, Wis., J. Webber, box 161.
78. Duluth, Minn., J. L. White, 19 Piedmont, av., East Duluth.
85. Alpena, Mich, A. W. Smith, 414 First street.
86. Menominee, Mich., W. Thorngton.
87. Detroit, Mich, W. Barr, 183 Orleans street.
88. Sturgeon Bay, Wis., F. G. Kimber.
89. Ogdensburg, N. Y., E. C. Davidson, 26 Washington street.
90. Pentwater, Mich., W. Houghtby.
91. Ashtabula, Ohio, R. Simpson, Ashtabula Harbor.
92. Saginaw, Mich., M. W. Gaffney, 115 Genesee av.
95. Port Clinton, Ohio, G. P. Semon.
96. Houghton, Wis., E. W. Curry.

A WORLD'S FAIR AWARD.

The following copy of the award given to exhibitors at the World's Fair, Messrs. Randolph & Clowes, is self-explanatory:

UNITED STATES.

DEPARTMENT E.—MINES AND MINING—22629—Exhibitor—RANDOLPH & CLOWES—Address, WATERBURY, CONN.—Group 51, Class 342—Exhibit—SEAMLESS DRAWN COPPER TUBES, BRAZED BRASS TUBES, SHEET COPPER.

AWARD.

SEAMLESS DRAWN COPPER TUBES:

Very admirable workmanship; manufacture of seamless cold-drawn tubes of brass and of copper of most extraordinary size. They consist of many seamless drawn brass and copper tubes, from ⅛ inch to 16 inches inside diameter, and up to forty feet long; also shells for dynamite, up to fourteen inches diameter, and seamless cold-drawn copper boilers up to sixteen inches in diameter and sixty gallons in capacity.

BRAZED BRASS TUBES.

A great variety of pretty patterns of variegated brass and copper tubing and moulding, and successfully overcoming serious technical difficulties in making them. It consists of a great number and variety of variegated copper and brass brazed tubings and mouldings. The patterns are attractive, and many involve considerable technical difficulty. The variegated and irregular tubing is made by rolling a brazed plain tube at a single pass, beteen rolls which have the variegated pattern cut into their surfaces, while a mandrel inside the tube carrying irregularly shaped rolls, forces the copper or brass tubing into the recesses in the main rolls, which are outside the tube.

SHEET COPPER

A very striking installation, and educational value of a large collection of sheet and spun brass and copper and of copper and brass tubing very strikingly installed.

Signed by Judges and Chairman of Executive Committee on Awards.

UNITED STATES.

DEPARTMENT H.—MANUFACTURES—7271—EXHIBITOR—RANDOLPH & CLOWES—ADDRESS, WATERBURY, CONN.—GROUP 126, CLASS 766—EXHIBIT, BOILERS AND BRASS AND COPPER KETTLES.

AWARD.

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Signed by Judges and Chairmen of Executive Committee on Awards.

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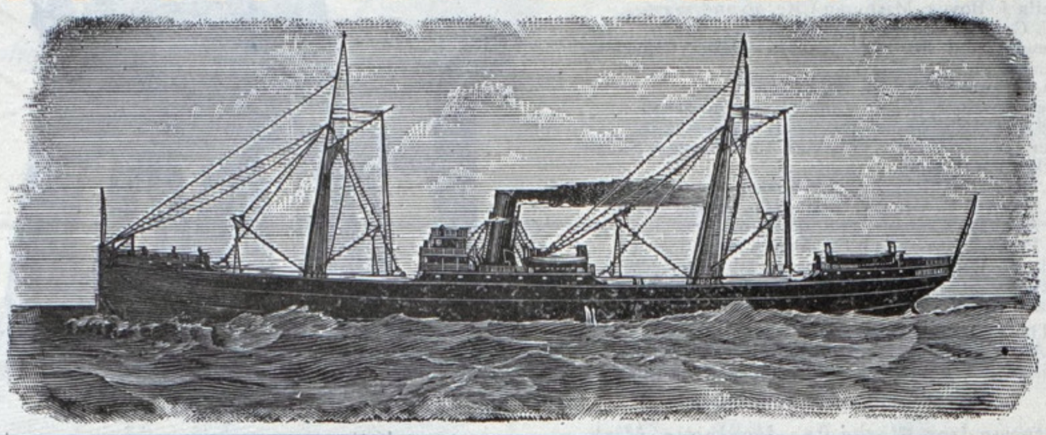

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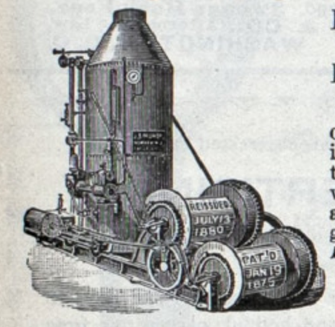

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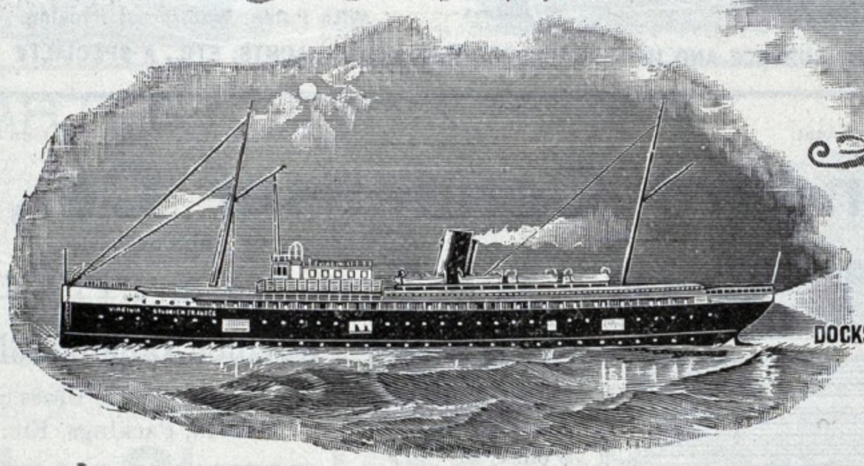

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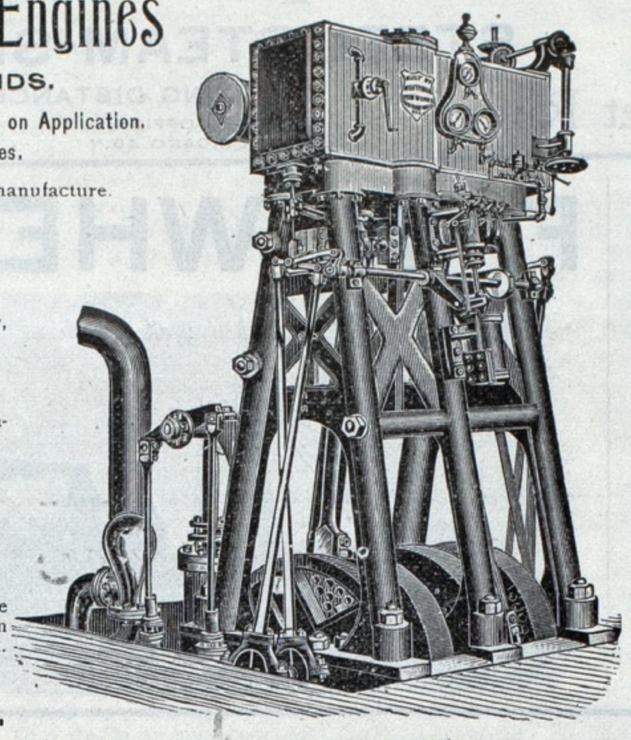

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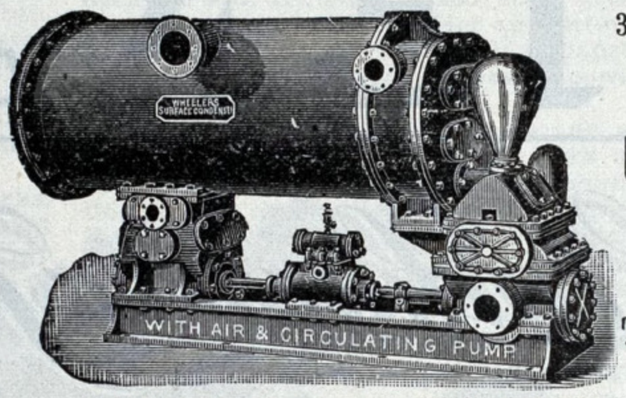

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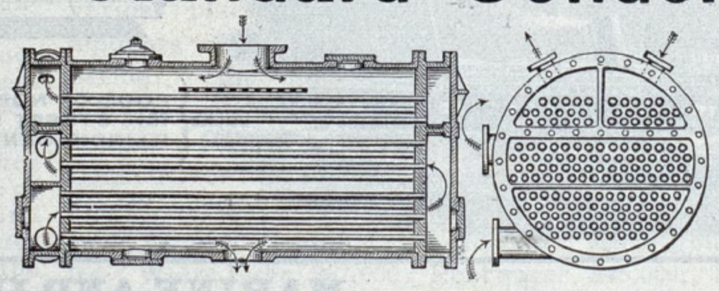

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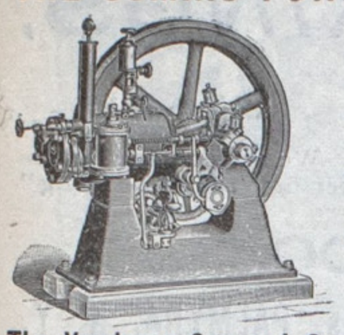

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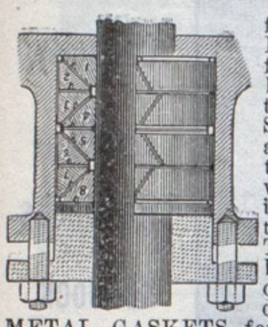

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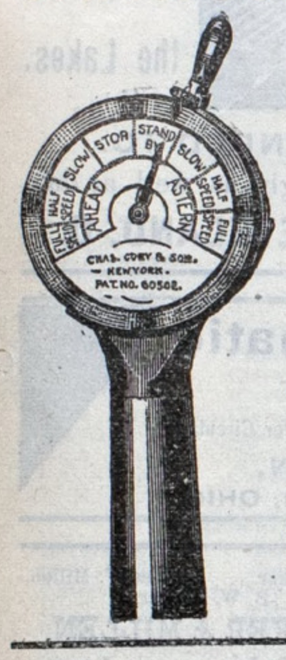

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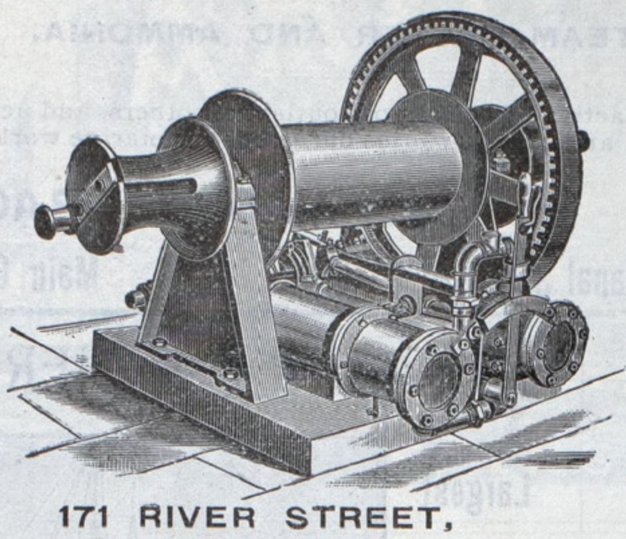

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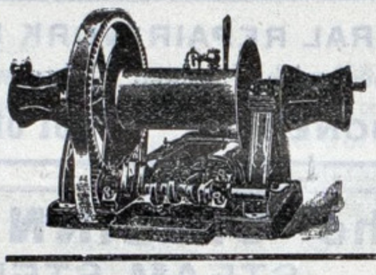

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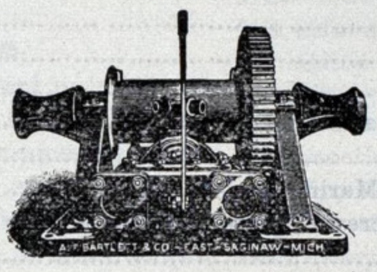

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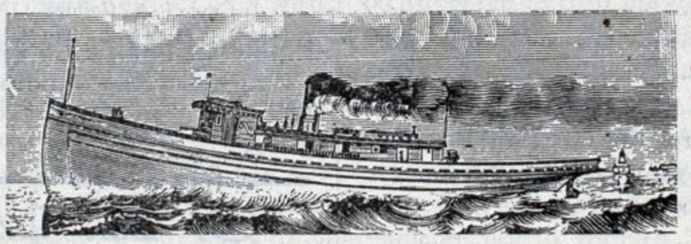

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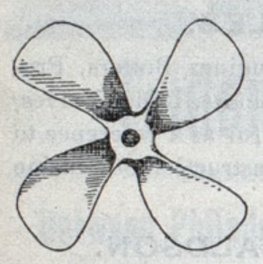

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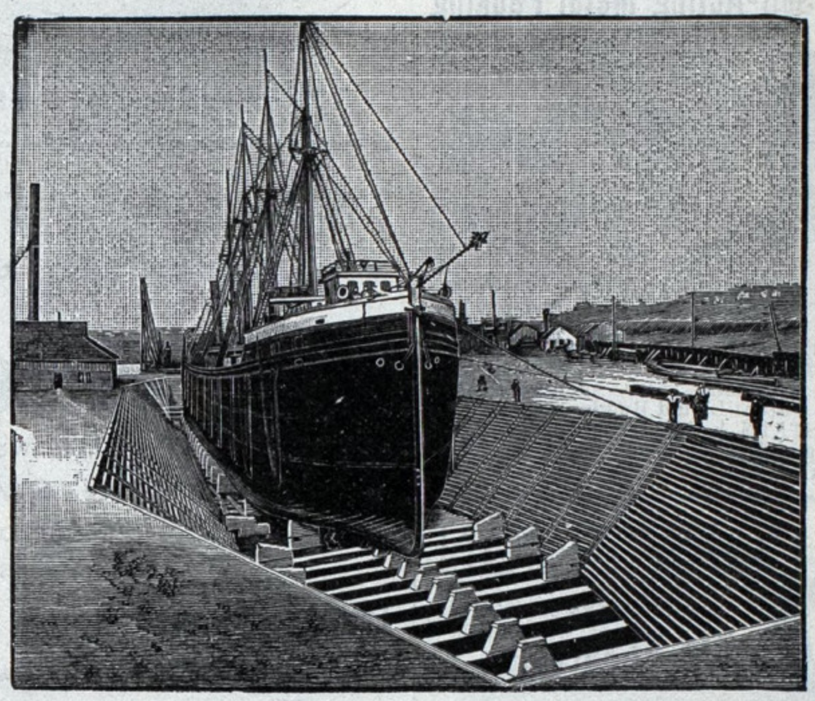

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